

## SEQUENCE LISTING

&lt;110&gt; EXELIXIS, INC.

&lt;120&gt; CSNKs AS MODIFIERS OF THE RAC PATHWAY AND METHODS OF USE

&lt;130&gt; EX03-087C-PC

&lt;150&gt; US 60/428,874

&lt;151&gt; 2002-11-25

&lt;160&gt; 9

&lt;170&gt; PatentIn version 3.2

&lt;210&gt; 1

&lt;211&gt; 2195

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

```

aggggagagc ggccgccgcc gctgccgctt ccaccacagt ttgaagaaaa caggtctgaa      60
acaaggctctt acccccagct gcttctgaac acagtgactg ccagatctcc aaacatcaag      120
tccagctttg tccgccaacc tgtctgacat gtcgggaccc gtgccaagca gggccagagt      180
ttacacagat gttaatacac acagacctcg agaatactgg gattacgagt cacatgtggt      240
ggaatgggga aatcaagatg actaccagct ggttcgaaaa ttaggccgag gtaaatacag      300
tgaagtattt gaagccatca acatcacaaa taatgaaaaa gttgttgta aaattctcaa      360
gccagtaaaa aagaagaaaa ttaagcgtga aataaagatt ttggagaatt tgagaggagg      420
tcccaacatc atcacactgg cagacattgt aaaagaccct gtgtcacgaa ccccgccctt      480
ggtttttgaa cacgtaaaca acacagactt caagcaattg taccagacgt taacagacta      540
tgatattoga ttttacatgt atgagattct gaaggccctg gattattgtc acagcatggg      600
aattatgcac agagatgtca agccccataa tgtcatgatt gatcatgagc acagaaagct      660
acgactaata gactgggggtt tggctgagtt ttatcatcct ggccaagaat ataatgtccg      720
agttgcttcc cgatacttca aaggctcctga gctacttgta gactatcaga tgtacgatta      780
tagtttggat atgtggagtt tgggttgat gctggcaagt atgatcttcc ggaaggagcc      840
atttttccat ggacatgaca attatgatca gttggtgagg atagccaagg ttctggggac      900
agaagattta tatgactata ttgacaaata caacattgaa ttagatccac gtttcaatga      960
tatcttgggc agacactctc gaaagcgatg ggaacgcttt gtccacagtg aaaatcagca     1020
ccttgtcagc cctgaggcct tggatttcct ggacaaactg ctgcgatatg accaccagtc     1080
acggcttact gcaagagagg caatggagca cccctatttc tacactgttg tgaaggacca     1140
ggctcgaatg ggttcatcta gcatgccagg gggcagtacg cccgtcagca gcgccaatat     1200
gatgtcaggg atttcttcag tgccaacccc ttcaccctt ggacctctgg caggctcacc     1260

```

```

agtgattgct gctgccaacc cccttgggat gcctgttcca gctgccgctg gcgctcagca 1320
gtaacggccc tatctgtctc ctgatgcctg agcagagggtg ggggagtcca ccctctcctt 1380
gatgcagctt gcgcctggcg gggaggggtg aaacacttca gaagcacctg gtctgaaccg 1440
ttgcttgtgg atttatagta gttcagtcac aaaaaaaaaa ttataatagg ctgattttct 1500
ttttcttttt tttttttaac tcgaactttt cataactcag gggattccct gaaaaattac 1560
ctgcagggtg aatatttcat ggacaaattt tttttctccc cctcccaaat ttagttcctc 1620
atcacaaaag aacaaagata aaccagcctc aatcccggct gctgcattta ggtggagact 1680
tcttccattt cccaccattg ttcctccacc gtccacactt ttaggggggtt ggtatctcgt 1740
gctcttctcc agagattaca aaaatgtagc ttctcagggg aggcaggaag aaaggaagga 1800
aggaaagaag gaaggagga cccaatctat aggagcagtg gactgcttgc tggtcgctta 1860
catcacttta ctccataagc gcttcagtg ggttatccta gtggctcttg tggagtggtg 1920
tcttagttac atcaagatgt tgaaaatcta cccaaaatgc agacagatac taaaaacttc 1980
tggtcagtaa gaatcatgtc ttactgatct aaccctaaat ccaactcatt tatactttta 2040
tttttagttc agtttaaaat gttgatacct tccctccag gctccttacc ttggtctttt 2100
ccctgttcat ctccaacat gctgtgctcc atagctggta ggagagggaa ggcaaaatct 2160
ttcttagttt tctttgtctt ggccattttg aattc 2195

```

```

<210> 2
<211> 1508
<212> DNA
<213> Homo sapiens

```

```

<400> 2
ggcacgagga ggggagagcg gccgccgecg ctgccgcttc caccacagtt tgaagaaaac 60
aggctctgaaa caaggtctta cccccagctg cttctgaaca cagtgactgc cagatctcca 120
aacatcaagt ccagctttgt ccgccaacct gtctgacatg tcgggacccg tgccaagcag 180
ggccagagtt tacacagatg ttaatacaca cagacctcga gaatactggg attacgagtc 240
acatgtgggtg gaatggggaa atcaagatga ctaccagctg gttcgaaaat taggccgagg 300
taaatacagt gaagtatttg aagccatcaa catcacaaat aatgaaaaag ttgttgtaa 360
aattctcaag ccagtaaaaa agaagaaaat taagcgtgaa ataaagattt tggagaattt 420
gagaggaggt cccaacatca tcacactggc agacattgta aaagaccctg tgtcacgaac 480
ccccgccttg gtttttgaa acgtaaacia cacagacttc aagcaattgt accagacgtt 540
aacagactat gatattcgat ttacatgta tgagattctg aaggccctgg attattgtca 600
cagcatggga attatgcaca gagatgtcaa gcccataat gtcattgattg atcatgagca 660

```

```

cagaaagcta cgactaatag actgggggttt ggctgagttt tatcatcctg gccaagaata 720
taatgtccga gttgcttccc gatacttcaa aggtcctgag ctacttgtag actatcagat 780
gtacgattat agtttgata tgtggagttt ggggtgtatg ctggcaagta tgatctttcg 840
gaaggagcca tttttccatg gacatgacaa ttatgatcag ttggtgagga tagccaaggt 900
tctggggaca gaagatttat atgactatat tgacaaatac aacattgaat tagatccacg 960
tttcaatgat atcttgggca gacactctcg aaagcgatgg gaacgctttg tccacagtga 1020
aatcagcac ctgtcagcc ctgaggcctt ggatttcctg gacaaactgc tgcgatatga 1080
ccaccagtca cggcttactg caagagagggc aatggagcac ccctatttct aactgttgt 1140
gaaggaccag gctcgaatgg gttcatctag catgccaggg ggcagtaggc ccgtcagcag 1200
cgccaatatg atgtcaggga tttcttcagt gccaacccct tcaccccttg gacctctggc 1260
aggctcacca gtgattgtg ctgccaaccc ccttgggatg cctgttccag ctgccgtgg 1320
cgctcagcag taacggccct atctgtctcc tgatgcctga gcagaggtgg gggagtccac 1380
cctctccttg atgcagcttg cgctggcgg ggaggggtga aacacttcag aagcaccgtg 1440
tctgaaccgt tgcttggtga tttatagtag ttcagtcata aaaaaaaaaa aaaaaaaaaa 1500
aaaaaaaaa 1508

```

```

<210> 3
<211> 1250
<212> DNA
<213> Homo sapiens

```

```

<400> 3
ccaaacatca agtccagctt tgtccgcaa cctgtctgac atgtcgggac ccgtgccaa 60
cagggccaga gtttacacag atgttaatac acacagacct cgagaatact gggattacga 120
gtcacatgtg gtggaatggg gaaatcaaga tgactaccag ctgggtcgaa aattaggccg 180
aggtaaatac agtgaagtat ttgaagccat caacatcaca aataatgaaa aagttgttgt 240
taaaattctc aagccagtaa aaaagaagaa aattaagcgt gaaataaaga ttttgagaa 300
tttgagagga ggtcccaaca tcatcacact ggcagacatt gtaaaagacc ctgtgtcacg 360
aacccccgcc ttggtttttg aacacgtaaa caacacagac ttcaagcaat tgtaccagac 420
gttcacagac tatgatattc gattttacat gtatgagatt ctgaaggccc tggattattg 480
tcacagcatg ggaattatgc acagagatgt caagcccat aatgtcatga ttgatcatga 540
gcacagaaag ctacgactaa tagactgggg tttggctgag ttttatcatc ctggccaaga 600
atataatgtc cgagttgctt cccgatactt caaaggctct gagctacttg tagactatca 660
gatgtacgat tatagtttgg atatgtggag tttgggttgt atgctggcaa gtatgatctt 720
tcggaaggag ccatttttcc atggacatga caattatgat cagttggtga ggatagccaa 780

```

gggtctgggg acagaagatt tatatggcta tattgacaaa tacaacattg aattagatcc 840  
 acgtttcaat gatattcttg gcagacactc tcgaaagcga tgggaacgct ttgtccaccg 900  
 tgaaaatcag caccttgta gccctgaggc cttggatttc ctggacaaac tgctgcgata 960  
 tgaccaccag tcacggctta ctgaagaga ggccatggag caccctatt tctacactgt 1020  
 tgtgaaggac caggctcgaa tgggttcac tagcatgcc gggggcagta caccgcag 1080  
 cagcgccaat gtgatgtcag ggatttcttc agtgccaacc ccttcacccc ttggacctct 1140  
 ggcaggetca ccagtattg ctgctgcaa ccccttggg atgcctgttc cagctgccgc 1200  
 tggcgctcag cagtaacggc cctatctgtc tctgatgcc tgagcagagg 1250

<210> 4  
 <211> 2622  
 <212> DNA  
 <213> Homo sapiens

<400> 4  
 atgtgtctg tgtgagcaga ggggagagcg gccgccgccc ctgccgttc caccacagtt 60  
 tgaagaaaac aggtctgaaa caaggtctta ccccgagctg cttctgaaca cagtactgc 120  
 cagatctcca aacatcaagt ccagctttgt ccgccaacct gtctgacatg tcgggacccg 180  
 tgccaagcag ggccagagtt tacacagatg ttaatacaca cagacctga gaatactggg 240  
 attacgagtc acatgtggtg gaatggggaa atcaagatga ctaccagctg gttcgaaaat 300  
 taggccgagg taaatacagt gaagtatttg aagccatcaa catcacaaat aatgaaaaag 360  
 ttgttgtaa aattctcaag ccagtaaaaa agaagaaaat taagcgtgaa ataaagattt 420  
 tggagaattt gagaggaggt cccaacatca tcacactggc agacattgta aaagaccctg 480  
 tgtcacgaac cccgccttg gtttttgaac acgtaaacaa cacagacttc aagcaattgt 540  
 accagacgtt aacagactat gatattcgat ttacatgta tgagattctg aaggccctgg 600  
 attattgtca cagcatggga attatgcaca gagatgtcaa gcccataat gtcattgattg 660  
 atcatgagca cagaaagcta cgactaatag actggggttt ggctgagttt tatcatcctg 720  
 gccagaata taatgtccga gttgcttccc gatacttcaa aggtcctgag ctactttag 780  
 actatcagat gtacgattat agtttgata tgtggagttt gggttgtatg ctggcaagta 840  
 tgatctttcg gaaggagcca tttttccatg gacatgacaa ttatgatcag ttggtgagga 900  
 tagccaaggt tctggggaca gaagatttat atgactatat tgacaaatac aacattgaat 960  
 tagatccacg tttcaatgat atcttgggca gacactctcg aaagcgatgg gaacgctttg 1020  
 tccacagtga aaatcagcac cttgtcagcc ctgaggcctt ggatttcctg gacaaactgc 1080  
 tgcgatatga ccaccagtca cggcttactg caagagagggc aatggagcac ccctatttct 1140

```

acactgttgt gaaggaccag gctcgaatgg gttcatctag catgccaggg ggcagtacgc 1200
ccgtcagcag cgccaatatg atgtcaggga tttcttcagt gccaaccctc tcacccttgg 1260
gacctctggc aggctcacca gtgattgctg ctgccaaccc ccttggtatgc ctgttccagc 1320
tgccgctgcg ctccagcagta acggccctat ctgtctcctg atgcctgagc agaggtgggg 1380
gagtcacccc tctccttgat gcagcttgcg cctggcgggg aggggtgaaa cacttcagaa 1440
gcaccgtgtc tgaaccgttg cttgtggatt tatagtagtt cagtcataaa aaaaaatta 1500
taataggctg attttctttt ttcttttttt ttttaactcg aacttttcat aactcagggg 1560
attccctgaa aaattacctg caggtggaat atttcatgga caaatTTTTT tttctccct 1620
cccaaattta gttcctcatc acaaagaac aaagataaac cagcctcaat cccggtgct 1680
gcatttaggt ggagacttct tccattccc accattgttc ctccaccgtc ccacacttta 1740
gggggttggt atctcgtgct cttctccaga gattacaaa atgtagcttc tcaggggagg 1800
caggaagaaa ggaaggaagg aaagaaggaa gggaggacc aatctatagg agcagtggac 1860
tgcttgctgg tcgcttacat cactttactc cataagcgtc tcagtggggg taccctagt 1920
gctcttggtg aagtgtgtct tagttacatc aagatgttga aaatctacc aaaatgcaga 1980
cagatactaa aaacttctgt tcagtaagaa tcatgtctta ctgatctaac cctaaatcca 2040
actcatttat acttttattt ttagttcagt ttaaaatgtt gataccttc ctcccaggct 2100
ccttaccttg gtcttttccc tgttcatctc ccaacatgct gtgctccata gctggtagga 2160
gaggaagggc aaaatcttct ttagtttctc ttgtcttggc cattttgaat tcattcagtt 2220
actgggcata acttactgct tttacaaaa gaaacaaaca ttgtctgtac aggtttcatg 2280
ctagagctaa tgggagatgt ggccacactg acttccattt taagcttct accttctttt 2340
cctccgaccg tcccctccc tcacatgcca tccagtgaga agacctgtc ctcagtcttg 2400
taaagtatc ttgagaggta ggagcagagc cactatctcc attgaagctg aaatggtaga 2460
cctgtaattg tgggaaaact ataaactctc ttgttacagc cccgccacc cttgctgtgt 2520
gtatatatat aatactttgt cttcatatg tgaaagatcc agtgttgga ttctttggtg 2580
taaataaacg ttggtttta tttatcaaaa aaaaaaaaaa ga 2622

```

&lt;210&gt; 5

&lt;211&gt; 1524

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5

```

gaggggagag cggccgccgc cgctgccgct tccaccacag tttgaagaaa acaggtctga 60
aacaaggtct tccccccagc tgcttctgaa cacagtgact gccagatctc caaacatcaa 120
gtccagcttt gtccgccaac ctgtctgaca tgtcgggacc cgtgccaagc agggccagag 180

```

```

tttacacaga tgtaataca cacagacctc gagaatactg ggattacgag tcacatgtgg 240
tggaatgggg aaatcaagat gactaccagc tggttcgaaa attaggccga ggtaaataca 300
gtgaagtatt tgaagccatc aacatcacaa ataatgaaaa agttgttggt aaaattctca 360
agccagtaaa aaagaagaaa attaagcgtg aaataaagat ttggagaatt tgagaggagg 420
tcccaacatc atcacactgg cagacattgt aaaagaccct gtgtcacgaa ccccccgcctt 480
ggtttttgaa cagtaaaaca acacagactt caagcaattg taccagacgt taacagacta 540
tgatattcga ttttacatgt atgagattct gaaggccctg gattattgtc acagcatggg 600
aattatgcac agagatgtca agcccataa tgtcatgatt gatcatgagc acagaaagct 660
acgactaata gactgggggt tggtgagtt ttatcatcct ggccaagaat ataatgtccg 720
agttgcttcc cgatacttca aaggctctga gctacttgta gactatcaga tgtacgatta 780
tagtttggat atgtggagtt tgggttgat gctggcaagt atgatctttc ggaaggagcc 840
atttttccat ggacatgaca attatgatca gttggtgagg atagccaagg ttctggggac 900
agaagattta tatgactata ttgacaaata caacattgaa ttagatccac gtttcaatga 960
tatcttgggc agacactctc gaaagcgatg ggaacgcttt gtccacagtg aaaatcagca 1020
ccttgtcagc cctgaggcct tggatttcct ggacaaactg ctgcgatatg accaccagtc 1080
acggcttact gcaagagagg caatggagca cccctatttc tacactgttg tgaaggacca 1140
ggctcgaatg ggttcatcta gcatgccagg gggcagtagc cccgtcagca gcgccaatat 1200
gatgtcaggg atttcttcag tgccaacccc ttcacccctt ggacctctgg caggctcacc 1260
agtgattgct gctgccaacc cccttgggat gcctgttcca gctgccgctg gcgtcagca 1320
gtaacggccc tatctgtctc ctgatgcctg agcagagggtg ggggagtcca ccctctcctt 1380
gatgcagctt gcgcctggcg gggaggggtg aaacacttca gaagcacctg gtctgaaccg 1440
ttgcttgtagg atttatagta gttcagtcac aaaaaaaaaat tataataggc taaaaaaaaa 1500
aaaaaaaaa aaaaaaaaaa aaaa 1524

```

```

<210> 6
<211> 1244
<212> DNA
<213> Homo sapiens

```

```

<400> 6
aagtccagct ttgtccgcca acctgtctga catgtcggga cccgtgcca gcagggccag 60
agtttacaca gatgttaata cacacagacc tcgagaatac tgggattacg agtcacatgt 120
gggtggaatgg ggaaatcaag atgactacca gctgggttcga aaattaggcc gaggtaaata 180
cagtgaagta tttgaagcca tcaacatcac aaataatgaa aaagttgttg ttaaaattct 240

```

caagccagta aaaagaaga aaattaagcg tgaataaag attttggaga atttgagagg 300  
 aggtcccaac atcatcacac tggcagacat tgtaaaagac cctgtgtcac gaacccccgc 360  
 cttggttttt gaacacgtaa acaacacaga cttcaagcaa ttgtaccaga cgtaacaga 420  
 ctatgatatt cgattttaca tgtatgagat tctgaaggcc ctggattatt gtcacagcat 480  
 gggaattatg cacagagatg tcaagcccca taatgtcatg attgatcatg agcacagaaa 540  
 gctacgacta atagactggg gtttggctga gttttatcat cctggccaag aatataatgt 600  
 ccgagttgct tcccataact tcaaaggctc tgagctactt gtagactatc agatgtacga 660  
 ttatagtttg gatatgtgga gtttgggttg tatgctggca agtatgatct ttcggaagga 720  
 gccatttttc catggacatg acaattatga tcagttggtg aggatagcca aggttctggg 780  
 gacagaagat ttatatgact atattgacaa atacaacatt gaattagatc cacgtttcaa 840  
 tgatatcttg ggcagacact ctgaaagcg atgggaacgc tttgtccaca gtgaaaatca 900  
 gcaccttgtc agccctgagg ccttggattt cctggacaaa ctgctgcat atgaccacca 960  
 gtcacggctt actgcaagag aggcaatgga gcaccctat ttctacactg ttgtgaagga 1020  
 ccaggctcga atgggttcat ctagcatgcc agggggcagt acgcccgtca gcagcgccaa 1080  
 tatgatgtca gggattttct cagtgccaac cccttcaccc cttggacctc tggcaggctc 1140  
 accagtgatt gctgctgcca acccccttgg gatgcctgtt ccagctgccg ctggcgctca 1200  
 gcagtaacgg ccctatctgt ctctgatgc ctgagcagag gtgg 1244

<210> 7  
 <211> 1212  
 <212> DNA  
 <213> Homo sapiens

<400> 7  
 atggactaca aggacgatga cgataaggga tcctcgggac ccgtgccaaag cagggccaga 60  
 gtttacacag atgttaatac acacagacct cgagaatact gggattacga gtcacatgtg 120  
 gtggaatggg gaaatcaaga tgactaccag ctggttcgaa aattaggccg aggtaaatac 180  
 agtgaagtat ttgaagccat caacatcaca aataatgaaa aagttgttgt taaaattctc 240  
 aagccagtaa aaaagaagaa aattaagcgt gaaataaaga ttttggagaa tttgagagga 300  
 ggtcccaaca tcatcacact ggcagacatt gtaaaagacc ctgtgtcacg aacccccgcc 360  
 ttggtttttt aacacgtaaa caacacagac ttcaagcaat tgtaccagac gttaacagac 420  
 tatgatattc gattttacat gtatgagatt ctgaaggccc tggattattg tcacagcatg 480  
 ggaattatgc acagagatgt caagccccat aatgtcatga ttgatcatga gcacagaaag 540  
 ctacgactaa tagactgggg tttggctgag ttttatcatc ctggccaaga atataatgtc 600  
 cgagttgctt cccgataactt caaaggctct gagctacttg tagactatca gatgtacgat 660

tatagtttgg	atatgtggag	tttgggttgt	atgctggcaa	gtatgatctt	tcggaaggag	720
ccatttttcc	atggacatga	caattatgat	cagttggtga	ggatagccaa	ggttctgggg	780
acagaagatt	tatatgacta	tattgacaaa	tacaacattg	aattagatcc	acgtttcaat	840
gatatcttgg	gcagacactc	tcgaaagcga	tgggaacgct	ttgtccacag	tgaaaatcag	900
caccttgtca	gccctgaggc	cttggatttc	ctggacaaac	tgctgcgata	tgaccaccag	960
tcacggctta	ctgcaagaga	ggcaatggag	cacccttatt	tctacactgt	tgtgaaggac	1020
caggctcgaa	tgggttcac	tagcatgcca	gggggcagta	cgcccgtag	cagcgccaat	1080
atgatgtcag	ggatttcttc	agtgccaa	ccttcacccc	ttggacctct	ggcaggetca	1140
ccagtgtatg	ctgctgcaa	ccccctggg	atgctgttc	cagctgccgc	tggcgctcag	1200
caggaattct	ga					1212

<210> 8  
 <211> 1212  
 <212> DNA  
 <213> Homo sapiens

<400> 8						
atggactaca	aggacgatga	cgataaggga	tcctcgggac	ccgtgccaa	cagggccaga	60
gtttacacag	atgttaatac	acacagacct	cgagaatact	gggattacga	gtcacatgtg	120
gtggaatggg	gaaatcaaga	tgactaccag	ctggttcgaa	aattaggccg	aggtaaatac	180
agtgaagtat	ttgaagccat	caacatcaca	aataatgaaa	aagttgttgt	taaaattctc	240
aagccagtaa	aaaagaagaa	aattaagcgt	gaaataaaga	ttttggagaa	tttgagagga	300
gggtccaaca	tcacacact	ggcagacatt	gtaaaagacc	ctgtgtcacg	aacccccgcc	360
ttggtttttg	aacacgtaa	caacacagac	ttcaagcaat	tgtaccagac	gttaacagac	420
tatgatattc	gattttacat	gtatgagatt	ctgaaggccc	tggattattg	tcacagcatg	480
ggaattatgc	acagagatgt	caagcccat	aatgtcatga	ttgatcatga	gcacagaaag	540
ctacgactaa	tagactgggg	tttggctgag	ttttatcatc	ctggccaaga	atataatgtc	600
cgagttgctt	cccgatactt	caaaggctct	gagctacttg	tagactatca	gatgtacgat	660
tatagtttgg	atatgtggag	tttgggttgt	atgctggcaa	gtatgatctt	tcggaaggag	720
ccatttttcc	atggacatga	caattatgat	cagttggtga	ggatagccaa	ggttctgggg	780
acagaagatt	tatatgacta	tattgacaaa	tacaacattg	aattagatcc	acgtttcaat	840
gatatcttgg	gcagacactc	tcgaaagcga	tgggaacgct	ttgtccacag	tgaaaatcag	900
caccttgtca	gccctgaggc	cttggatttc	ctggacaaac	tgctgcgata	tgaccaccag	960
tcacggctta	ctgcaagaga	ggcaatggag	cacccttatt	tctacactgt	tgtgaaggac	1020

caggctcgaa tgggttcac tagcatgcc gggggcagta cggccgtcag cagcgccaat 1080  
 atgatgtcag ggatttcttc agtgccaacc cttcacccc ttggacctct ggcagggtca 1140  
 ccagtgattg ctgctgccaa ccccttggg atgcctgttc cagctgccgc tggcgctcag 1200  
 caggaattct ga 1212

<210> 9  
 <211> 391  
 <212> PRT  
 <213> Homo sapiens

<400> 9

Met Ser Gly Pro Val Pro Ser Arg Ala Arg Val Tyr Thr Asp Val Asn  
 1 5 10 15

Thr His Arg Pro Arg Glu Tyr Trp Asp Tyr Glu Ser His Val Val Glu  
 20 25 30

Trp Gly Asn Gln Asp Asp Tyr Gln Leu Val Arg Lys Leu Gly Arg Gly  
 35 40 45

Lys Tyr Ser Glu Val Phe Glu Ala Ile Asn Ile Thr Asn Asn Glu Lys  
 50 55 60

Val Val Val Lys Ile Leu Lys Pro Val Lys Lys Lys Lys Ile Lys Arg  
 65 70 75 80

Glu Ile Lys Ile Leu Glu Asn Leu Arg Gly Gly Pro Asn Ile Ile Thr  
 85 90 95

Leu Ala Asp Ile Val Lys Asp Pro Val Ser Arg Thr Pro Ala Leu Val  
 100 105 110

Phe Glu His Val Asn Asn Thr Asp Phe Lys Gln Leu Tyr Gln Thr Leu  
 115 120 125

Thr Asp Tyr Asp Ile Arg Phe Tyr Met Tyr Glu Ile Leu Lys Ala Leu  
 130 135 140

Asp Tyr Cys His Ser Met Gly Ile Met His Arg Asp Val Lys Pro His  
 145 150 155 160

Asn Val Met Ile Asp His Glu His Arg Lys Leu Arg Leu Ile Asp Trp  
 165 170 175

Gly Leu Ala Glu Phe Tyr His Pro Gly Gln Glu Tyr Asn Val Arg Val  
 180 185 190

Ala Ser Arg Tyr Phe Lys Gly Pro Glu Leu Leu Val Asp Tyr Gln Met  
 195 200 205

Tyr Asp Tyr Ser Leu Asp Met Trp Ser Leu Gly Cys Met Leu Ala Ser  
 210 215 220

Met Ile Phe Arg Lys Glu Pro Phe Phe His Gly His Asp Asn Tyr Asp  
 225 230 235 240

Gln Leu Val Arg Ile Ala Lys Val Leu Gly Thr Glu Asp Leu Tyr Asp  
 245 250 255

Tyr Ile Asp Lys Tyr Asn Ile Glu Leu Asp Pro Arg Phe Asn Asp Ile  
 260 265 270

Leu Gly Arg His Ser Arg Lys Arg Trp Glu Arg Phe Val His Ser Glu  
 275 280 285

Asn Gln His Leu Val Ser Pro Glu Ala Leu Asp Phe Leu Asp Lys Leu  
 290 295 300

Leu Arg Tyr Asp His Gln Ser Arg Leu Thr Ala Arg Glu Ala Met Glu  
 305 310 315 320

His Pro Tyr Phe Tyr Thr Val Val Lys Asp Gln Ala Arg Met Gly Ser  
 325 330 335

Ser Ser Met Pro Gly Gly Ser Thr Pro Val Ser Ser Ala Asn Met Met  
 340 345 350

Ser Gly Ile Ser Ser Val Pro Thr Pro Ser Pro Leu Gly Pro Leu Ala  
 355 360 365

Gly Ser Pro Val Ile Ala Ala Ala Asn Pro Leu Gly Met Pro Val Pro  
 370 375 380

Ala Ala Ala Gly Ala Gln Gln  
 385 390